REMARKS

Claims 1-36 are pending in the present application.

In the Office Action mailed September 21, 2005, the Examiner rejected claims 8, 15, 25 and 32 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 3, 4, 5, 6, 11-13, 18, 20-23, 28-30, and 35-36 are rejected under 35 U.S.C. §102(e) as being unpatentable over Yavuz et al. (US 2003/0123406).

Claims 2 and 19 are rejected under 35 U.S.C. §103(a) as being unpatentable over Yavuz et al. (US 2003/0123406) in view of Haim (US 2002/0102944).

Claims 7, 8, 14, 15, 24, 25, 31 and 32 are rejected under 35 U.S.C. §103(a) as being unpatentable over Yavuz et al. (US 2003/0123406) in view of Farlow (WO 02/13448 A2).

Claims 9, 10, 16, 17, 26, 27, 33 and 34 are rejected under 35 U.S.C. §103(a) as being unpatentable over Yavuz et al. (US 2003/0123406) in view of Frank (US 2003/0123406).

Applicant respectfully responds to this Office Action.

35 U.S.C. §112 Rejection: Claims 8, 15, 25 and 32

On page 2, the Examiner rejected claims 8, 15, 25 and 32 under 35 U.S.C. §112 second paragraph stating that "It is not clear, how θ could describe a training algorithm since $\theta = \frac{L-1}{n}$ is just a parameter." θ describes the type of training algorithm used. See paragraph [0077]. In one embodiment, in a "single data user" case where the receiver employs a least squares estimation method (see paragraphs [0080-81]), $\theta = \frac{L-1}{n}$ (see paragraph [0083]).

35 U.S.C. §102(e) Rejection: Claims 1, 3, 4, 5, 6, 11-13, 18, 20-23, 28-30 and 35-36

On page 3 of the Office Action, the Examiner rejected claims 1, 3, 4, 5, 6, 11-13, 18, 20-23, 28-30 and 35-36 under 35 U.S.C. 102(e) as being unpatentable over Yavuz et al (US 2003/0123406).

Claim 1

Yavuz discloses "a means for efficiently allocating and dynamically adjusting a downlink data rate in view of periodic SINR estimates performed by mobile access terminal 8." See paragraph [0026] of Yavuz. Yavuz does not disclose a "means for using the quality metric to allocate a resource between the traffic signal and the dedicated reference signal" as taught by claim 1. More specifically, the Examiner points to paragraph [0023], lines 1-6 as disclosing "a traffic signal and a dedicated reference signal." Paragraph [0023], lines 1-6 of Yavuz discloses "traffic, a pilot signal, and overhead information." Instead of allocating a resource between the traffic, the pilot signal, and/or the overhead information, Yavuz discloses "multiple data rate control sets that are selected and dynamically adjusted in accordance with the present invention . . . by comparing measured channel conditions to the E_c/I_o threshold values provided in DRC table 30 and selecting one of the DRC sets accordingly." See paragraphs [0027-28]. In Yavuz, the resource is not allocated between "a traffic signal and a dedicated reference signal." Instead, the data rate is dynamically adjusted in the traffic channel. See paragraph [0027] of Yavuz. The change in data rate in the traffic channel doesn't result in a change in the amount of resource allocated to a dedicated reference signal. Since all the features of claim 1 are not disclosed by Yavuz, Yavuz does not anticipate claim 1 or any of its dependent claims.

Claim 11

Yavuz does not anticipate claim 11 because Yavuz does not disclose "uses the quality metric to allocate a resource between the dedicated reference signal and the traffic signal" as taught in claim 11. While, the Examiner points to lines 19-23 as disclosing this feature, it is unclear what quality metric is referred to, and what resource is being allocated. Although each DRC set mentioned in paragraph [0027] "includes a specified data rate [resource] (in kbps) . . . associated with a particular SINR [quality metric]", no allocating of a resource between the dedicated reference signal and the traffic signal is disclosed.

Next, the Examiner argues that Yavuz discloses the feature "means for using the received common reference signal and the received dedicated reference signal to train a receiver at the remote station" in paragraph [0023], lines 7-10. Paragraph [0023], lines 7-10 discloses pilot channel abursts@ "typically utilized . . . to estimate relevant channel conditions." Paragraph [0023], lines 7-10 of Yavuz. For example, "a mobile . . . may utilize the pilot burst to resolve the

multipath components into an estimate of the signal-to-interference-plus-noise ratio (SINR) . . ." Paragraph [0023], lines 11-14. Thus, the pilot channel abursts of Yavuz are used to estimate channel conditions, not train the receiver 538 to compensate for signal distortions that may have resulted from noise, interference, and the like during transmission. See paragraph [0048] of the present patent application. Stated another way, while Yavuz estimates changing channel conditions, the training component of the present patent application trains the receiver 538 to compensate for changing channel conditions. Since all the features of claim 11 are not disclosed by Yavuz, Yavuz does not anticipate claim 11 or any of its dependent claims.

Claim 18

Yavuz does not anticipate claim 18 because Yavuz does not disclose "uses the quality metric to allocates at least one resource between a traffic signal and a dedicated reference signal" as taught in claim 18. The Examiner points to paragraph [0023], lines 1-6 as disclosing this feature. As stated above with respect to claim 1, paragraph [0023], lines 1-6 of Yavuz discloses "traffic, a pilot signal, and overhead information." Instead of allocating a resource between the traffic, the pilot signal, and/or the overhead information, Yavuz discloses "multiple data rate control sets that are selected and dynamically adjusted in accordance with the present invention . . . by comparing measured channel conditions to the E_c/I_o threshold values provided in DRC table 30 and selecting one of the DRC sets accordingly." See paragraphs [0027-28]. In Yavuz, the resource is not allocated between "a traffic signal and a dedicated reference signal." Instead, the data rate is dynamically adjusted in the traffic channel. See paragraph [0027] of Yavuz. The change in data rate in the traffic channel doesn't result in a change in the amount of resource allocated to a dedicated reference signal.

Next, the Examiner points to paragraph [0027], lines 19-23 as disclosing the feature "a resource allocation component that uses the quality metric to allocate a resource between the traffic signal and the dedicated reference signal." It is unclear what quality metric is referred to, and what resource is being allocated. Although each DRC set mentioned in paragraph [0027] "includes a specified data rate [resource] (in kbps) . . . associated with a particular SINR [quality metric]", no allocating of the data rate between a dedicated reference signal and the traffic signal is disclosed. Since all the features of claim 18 are not disclosed by Yavuz, Yavuz does not anticipate claim 18 or any of its dependent claims.

Claim 28

Yavuz does not anticipate claim 28 because Yavuz does not disclose "facilitate adaptive allocation of at least one resource between a traffic signal and a dedicated reference signal" as taught in claim 28. The Examiner points to paragraph [0023], lines 1-6 as disclosing this feature. As stated above with respect to claim 1, paragraph [0023], lines 1-6 of Yavuz discloses "traffic, a pilot signal, and overhead information." Instead of allocating a resource between the traffic, the pilot signal, and/or the overhead information, Yavuz discloses "multiple data rate control sets that are selected and dynamically adjusted in accordance with the present invention . . . by comparing measured channel conditions to the E_c/I_o threshold values provided in DRC table 30 and selecting one of the DRC sets accordingly." See paragraphs [0027-28]. In Yavuz, the resource is not allocated between "a traffic signal and a dedicated reference signal." Instead, the data rate is dynamically adjusted in the traffic channel. See paragraph [0027] of Yavuz. The change in data rate in the traffic channel doesn't result in a change in the amount of resource allocated to a dedicated reference signal.

Next, the Examiner points to paragraph [0027], lines 19-23 as disclosing the feature "wherein the base station uses the quality metric to allocate a resource between the dedicated reference signal and the traffic signal." It is unclear what quality metric is referred to, and what resource is being allocated. Although each DRC set mentioned in paragraph [0027] "includes a specified data rate [resource] (in kbps) is associated with a particular SINR [quality metric]", no allocating of the data rate between the dedicated reference signal and the traffic signal is disclosed.

Next, the Examiner argues that Yavuz discloses the feature "a training component that uses the received common reference signal and the received dedicated reference signal to train the receiver" in paragraph [0031], lines 1-6. Paragraph [0031], lines 1-6 discloses "compares the estimated SINR to the DRC sets contained within DRC table 30 (step 48) and, as depicted as step 50, preliminarily selects one or more DRC sets that share a maximum data rate value . . ." It is unclear where the received common reference signal and the received dedicated reference signal are disclosed in paragraph [0031]. Therefore, this feature of claim 28 is missing. Since all the features of claim 28 are not disclosed by Yavuz, Yavuz does not anticipate claim 28 or any of its dependent claims.

Claim 35

Yavuz does not anticipate claim 35 because Yavuz does not disclose "allocating at least one resource between a traffic signal and a dedicated reference signal" as taught in claim 35. The

Examiner points to paragraph [0023], lines 1-6 as disclosing this feature. As stated above with respect to claim 1, paragraph [0023], lines 1-6 of Yavuz discloses "traffic, a pilot signal, and overhead information." Instead of allocating a resource between the traffic, the pilot signal, and/or the overhead information, Yavuz discloses "multiple data rate control sets that are selected and dynamically adjusted in accordance with the present invention . . . by comparing measured channel conditions to the E_c/I_o threshold values provided in DRC table 30 and selecting one of the DRC sets accordingly." See paragraphs [0027-28]. In Yavuz, the resource is not allocated between "a traffic signal and a dedicated reference signal." Instead, the data rate is dynamically adjusted in the traffic channel. See paragraph [0027] of Yavuz. The change in data rate in the traffic channel doesn't result in a change in the amount of resource allocated to a dedicated reference signal. Since all the features of claim 1 are not disclosed by Yavuz, Yavuz does not anticipate claim 1 or any of its dependent claims.

Next, the Examiner points to paragraph [0027], lines 19-23 as disclosing the feature "using the quality metric to allocate a resource between the traffic signal and the dedicated reference signal." It is unclear what quality metric is referred to, and what resource is being allocated. Although each DRC set mentioned in paragraph [0027] "includes a specified data rate [resource] (in kbps) . . . associated with a particular SINR [quality metric]", no allocating of the data rate between the dedicated reference signal and the traffic signal is disclosed. Since all the features of claim 35 are not disclosed by Yavuz, Yavuz does not anticipate claim 35.

Claim 36

Yavuz does not anticipate claim 36 because Yavuz does not disclose "facilitate adaptive allocation of at least one resource between a traffic signal and a dedicated reference signal" as taught in claim 36. The Examiner points to paragraph [0023], lines 1-6 as disclosing this feature. As stated above with respect to claim 1, paragraph [0023], lines 1-6 of Yavuz discloses "traffic, a pilot signal, and overhead information." Instead of allocating a resource between the traffic, the pilot signal, and/or the overhead information, Yavuz discloses "multiple data rate control sets that are selected and dynamically adjusted in accordance with the present invention . . . by comparing measured channel conditions to the E_c/I_o threshold values provided in DRC table 30 and selecting one of the DRC sets accordingly." See paragraphs [0027-28]. In Yavuz, the

resource is not allocated between "a traffic signal and a dedicated reference signal." Instead, the data rate is dynamically adjusted in the traffic channel. See paragraph [0027] of Yavuz. The change in data rate in the traffic channel doesn't result in a change in the amount of resource allocated to a dedicated reference signal.

Next, the Examiner argues that Yavuz discloses the feature "using the received common reference signal and the received dedicated reference signal to train a receiver at the remote station" in paragraph [0031], lines 1-6. Paragraph [0031], lines 1-6 discloses "compares the estimated SINR to the DRC sets contained within DRC table 30 (step 48) and, as depicted as step 50, preliminarily selects one or more DRC sets that share a maximum data rate value . . ." It is unclear where the received common reference signal and the received dedicated reference signal are disclosed in paragraph [0031]. Therefore, this feature of claim 36 is missing. Since all the features of claim 36 are not disclosed by Yavuz, Yavuz does not anticipate claim 36.

35 U.S.C. §103(a) Rejection: Claims 2 and 19

The Examiner rejected claims 2 and 19 under 35 U.S.C. §103(a) as being unpatentable over Yavuz et al. (US 2003/0123406) in view of Haim (US 2002/0102944).

Claim 2 discloses the feature "means for using the quality metric to allocate a resource between the traffic signal and the dedicated reference signal, wherein the resource comprises power." Claim 19 discloses the feature "a resource allocation component that uses the quality metric to allocate a resource between the traffic signal and the dedicated reference signal, wherein the resource comprises power." As stated above, Yavuz does not disclose a "means for using the quality metric to allocate a resource between the traffic signal and the dedicated reference signal" as taught by independent claim 1. Instead, it discloses "a means for efficiently allocating and dynamically adjusting a downlink data rate in view of periodic SINR estimates performed by mobile access terminal 8." See paragraph [0026] of Yavuz.

Haim discloses "a method of controlling transmitter power . . . in which the user data signal having rate N(t) is converted into a transmission data signal having a faster rate M(t) for transmission . . . by repeating selected data bits whereby the energy per bit to noise spectrum density ratio is increased in the transmission data signal." See paragraph [0007] of Haim. Thus, Haim does not disclose "allocating power between the traffic signal and the dedicated reference

signal." Instead, Haim increases the energy per bit to noise spectrum density ratio in the transmission data signal [in the traffic channel] when the transmission data rate is increased. Haim does not disclose allocating the power in a dedicated reference signal when it controls transmitter power. Since Yavuz et al. in view of Haim does not disclose all the features of claims 2 and 19, claims 2 and 19 are patentable. Also, claims 2 and 19 are allowable because they depend on allowable claims 1 and 18 respectively.

35 U.S.C. §103(a) Rejection: Claims 7, 8, 14, 15, 24, 25, 31 and 32

The Examiner rejected claims 7, 8, 14, 15, 24, 25, 31 and 32 under 35 U.S.C. §103(a) as being unpatentable over Yavuz et al. (US 2003/0123406) in view of Farlow (WO 02/13448 A2).

With respect to claims 7, 14, 24 and 31, the Examiner states that Farlow teaches in an analogous art, means for transmitting a parameter e_x to the remote station, wherein the parameter e_x represents the portion of the resource allocated to the dedicated reference signal (Page 20, lines 20-25). It is unclear what the Examiner is referring to because there is no page 20 in WO 02/13448 A2. Also, claims 7, 14, 24 and 31 are allowable because they depend on allowable claims 1, 11, 18, and 28 respectively.

With respect to claims 8, 15, 25 and 32, the Examiner states that Farlow discloses in an analogous art transmitting a parameter to the base station, wherein the parameter θ describes a training algorithm (Page 9, lines 20-24) used to train receiver at the remote station.

Claims 8, 15, 25 and 32 are allowable because they depend on allowable claims 1, 11, 18, and 28 respectively.

35 U.S.C. §103(a) Rejection: Claims 9, 10, 16, 17, 26, 27, 33 and 34

The Examiner rejected claims 9, 10, 16, 17, 26, 27, 33 and 34 under 35 U.S.C. §103(a) as being unpatentable over Yavuz et al. (US 2003/0123406) in view of Frank (US 2003/0123406).

Claims 9, 10, 16, 17, 26, 27, 33 and 34 are allowable because they depend on allowable claims 1, 11, 18, and 28 respectively.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

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By: _____

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